

Recap on Concrete technology

By Daniel Kenneth Villanueva

Answer

An effective concrete should satisfy the requirements in the following criteria:

1. Strength
 - a. The concrete must have the desired strength for if it fails to have the desired strength, the concrete is going to crack apart. It should be noted however, that a concrete that is too strong for its purpose would be a concrete that is too expensive for the purpose desired.
2. Economy
 - a. The concrete must be as cheap as possible while still being a tool that is suitable for the job. This requirement is the reason why we would have to calculate the proper mix design and not simply derive it from trial and error.
3. Workability
 - a. The concrete should be sufficiently workable with regards to the machinery that would be used to process the concrete. It should be noted however, that the more workable a concrete is, the lesser is its compressive strength.
4. Durability
 - a. The concrete should be able to withstand the loads that are given to it. This requirement is established by having the correct compressive strength and ensuring that the concrete's response to external factors such as temperature is limited to a desirable level.
5. Density
 - a. The concrete must have the correct density. A concrete that is too dense would be too heavy when we consider the use case scenario and a concrete that is not dense enough would violate the required compressive strength requirements.